

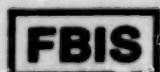
JPRS 74999

24 January 1980

# Worldwide Report

LAW OF THE SEA

No. 111



FOREIGN BROADCAST INFORMATION SERVICE

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## WORLDWIDE REPORT

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WORLDWIDE AFFAIRS

JAPAN, USSR FAIL TO AGREE AS FISHERY TALKS RESUME

OW040445 Tokyo KYODO in English 0416 GMT 4 Dec 79 OW

[Text] Moscow Dec 4 KYODO--Japan and the Soviet Union resumed fishery talks here Monday but failed to reach agreement on 1980 catch quotas in each other's 200-mile zone. The Soviet Union made a fresh proposal to continue talks on the basis of their respective offers setting each other's fish catch quotas. The Russians demanded, however, that Japan increase the Soviet catch quota of sardines and mackerel from the 380,000 tons proposed by Japan to 450,000 tons.

Japan rejected the fresh proposal, maintaining that the Soviet offer setting Japan's Alaska pollack quota at 200,000 tons does not provide a basis for talks. On November 27, the Soviet Union proposed that Japan's overall catch quota in its 200-mile zone in 1980 be set at 650,000 tons, including 200,000 tons of Alaska pollack. Japan, on its part, proposed to the Soviet Union an overall quota of 650,000 tons, including 380,000 tons of sardine and mackerel.

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WORLDWIDE AFFAIRS

JAPANESE-SOVIET FISHING NEGOTIATIONS CONTINUE IN MOSCOW

OW060128 Tokyo KYODO in English 0113 GMT 6 Dec 79 OW

[Excerpts] Moscow Dec 5 KYODO--The Japanese delegation to the fishery talks in Moscow said it would exert efforts to have Japan's 1980 catch quota in the Soviet 200-mile zone set at 750,000 tons, or the same level as this year.

Japan told the Soviet Union on December 4 that it will not seek an increase in its overall catch quota if the Soviet Union agreed to reduce the catch amount of sardines and mackerel in the Japanese zone. This was taken to mean that Japan will agree to the Soviet catching of around 430,000 tons of sardines and mackerel in the Japanese 200-mile zone, or more than the originally proposed 380,000 tons, on the condition that its quota for Alaska pollack in the Soviet zone be increased.

At Wednesday's meeting, however, the Soviet Union maintained that it cannot allow Japan to catch more than 200,000 tons of Alaska pollack in view of the present state of resources. It said Japan should agree to the Soviet catching of 450,000 tons of sardines and mackerel in the Japanese zone if the catch volume for Alaska pollack is to be increased.

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## WORLDWIDE AFFAIRS

### JAPAN TO TRY TO BREAK DEADLOCK IN MOSCOW FISHERY TALKS

#### Imamura Goes to Moscow

OW080328 Tokyo KYODO in English 0101 GMT 8 Dec 79 OW

[Text] Tokyo Dec 8 KYODO--The government has decided to dispatch Nobuo Imamura, director general of the Fisheries Agency, to Moscow Monday to speed up current negotiations for deciding the 1980 overall catch quotas in the 200-mile fishery zones of Japan and the Soviet Union. The negotiations had been under way in the Soviet capital ever since November 20.

Japan originally demanded that its quota in the Soviet zone be increased to 800,000 tons from this year's 750,000 tons while the Soviet Union wants to have its quota in the Japanese zone kept at this year's level of 650,000 tons. Japan later revealed readiness to a quota of 750,000 tons, or the same as in 1979.

Although considerable progress has been made on the overall quotas, both countries remain at odds on the catch volume for various species of fish. Japan wants to catch 318,800 tons of Alaska pollack in the Soviet zone in 1980, or 18,800 tons more than this year, while the Soviet Union is demanding that its quota for sardines and mackerel in the Japanese zone be raised to 550,000 tons from this year's 450,000 tons.

The government decided to send Imamura to Moscow in order to break the present deadlock and to work for early agreement on the problems concerned with restrictions on fishing operations in the two countries' zones and on other matters. It hopes to conclude the talks by around December 15.

#### New Proposal

OW080330 Tokyo KYODO in English 0119 GMT 8 Dec 79 OW

[Text] Moscow Dec 7 KYODO--Japan made a new proposal to the Soviet Union in which it raised the Soviet catch volume for sardines and mackerel in the Japanese 200-mile fishery zone in 1980 to 216,150 tons each, or a total of 432,300 tons. The proposal was made at Friday's session of the current talks in Moscow to decide the 1980 overall catch quotas in the Japanese and Soviet 200-mile fishery zones.

The catch quotas for sardines and mackerel are 26,150 tons more each than those of the original proposal made by Japan on November 27. The Soviet Union originally proposed that its quota for sardines and mackerel be set at a total of 550,000 tons but it later reduced the figure to 450,000 tons. The Soviet Union is expected to reply to the new Japanese proposal at Saturday's session.

### Officials' Meeting on Negotiations

RUSSIAN SPOKE KYND in English 0459 GMT 12 Dec 78 22

[1200] Moscow Dec 12 KYND--Nobuo Inamura, director general of the Japanese Fisheries Agency, met with Soviet First Deputy Fisheries Minister Nikolay Kudryavtsev Tuesday to discuss current negotiations being conducted here for fixing the 1980 catch quotas in the Japanese and Soviet 200-mile fishery zones. Informed sources said the two officials only reviewed past developments of the talks. They believed substantial matters will be discussed Wednesday or later.

Inamura arrived in Moscow Monday for the talks which have been underway since November 10. He told newsmen after the meeting that the negotiations must be concluded this week in order to enable Japanese fishermen to start operations in the Soviet zone next year.

In working-level negotiations held so far, the Soviet Union revealed its opposition to the Japanese plan to set catch quotas separately for sardines and mackerel caught by the Soviet Union in the Japanese zone. The Soviet Union also has not reacted favorably to a Japanese proposal to switch the present interim Japan-Soviet and Soviet-Japan fishery agreements to long-term pacts.

### Second Move

RUSSIAN SPOKE KYND in English 0455 GMT 13 Dec 78 22

[1200] Moscow Dec 13 KYND--Japan revealed Wednesday it is willing to hold down its catch of Alaska pollack in 1980 in the Soviet 200-mile zone to the same level as this year's quota of 131,400 tons. Japan's concession was made known to Soviet First Deputy Fisheries Minister Nikolay Kudryavtsev by Nobuo Inamura, director general of the Japanese Fisheries Agency, who is now in Moscow to speed up negotiations on catch quotas in the Japanese and Soviet 200-mile fishery zones in 1980. Japan had been demanding that its catch quota for Alaska pollack in the Soviet zone in 1980 be increased 18,800 tons from this year's level.

Inamura also told the Soviet official that Japan will agree to increase the 1980 Soviet catch volume for sardines and mackerel in the Japanese zone to 17,000 tons, or 17,000 tons more than the figure originally proposed. Kudryavtsev, however, reiterated the Soviet stand and did not make a concrete response. Therefore, no progress was made.

A third round of meetings between Inamura and Kudryavtsev is scheduled to be held Thursday afternoon following a meeting of Japanese and Soviet negotiators. Inamura had held his first meeting with Kudryavtsev Tuesday.

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## WORLDWIDE AFFAIRS

### JAPANESE-SOVIET FISHERY TALKS CONCLUDE IN MOSCOW

OW170000 Moscow Radio in Japanese to Japan 1200 GMT 16 Dec 79 OW

[Text] Soviet-Japanese fishery talks, which opened in Moscow on 28 November, closed yesterday with the signing of official documents at the Soviet Fish Industry Ministry. A protocol, extending to 1980 the validity of the 1977 Intergovernmental agreement on fisheries in Soviet and Japanese coastal waters, was signed by Soviet Fish Industry Minister Vladimir Kamentsev and Japanese Ambassador Extraordinary and Plenipotentiary to the Soviet Union Tadamasa Uemoto. Instruments setting forth fishing regulations and conditions for Soviet fishermen in Japanese coastal waters and Japanese fishermen in the Soviet zone were also signed.

As a result of the talks and agreements reached, total fishing quotas for Japanese fishermen in Soviet coastal waters were set at 750,000 tons; this includes 250,000 tons of Alaskan salmon. Soviet fishermen are allowed to catch a total of 650,000 tons of fish including 200,000 tons of salmon and (cod) in Japanese coastal waters.

These instruments were exchanged between Soviet Fish Industry First Vice Minister Nikolay Kuznetsov and Tadamasa Uemoto, director general of the Fishery Agency of the Japanese Ministry of Agriculture, Forestry and Fisheries.

Soviet Fish Industry Minister Kamentsev, after congratulating Japanese Ambassador Uemoto and all participants in the Soviet-Japanese fishery talks on the successful completion of their work, said: [Begin recording in Russian fading into Japanese translation]

What I want to say first is that the signing of the documents today proves that our two countries can successfully resolve problems arising between them. If both sides sit at a negotiating table and try to settle a problem, they can always achieve it. The Japanese and Soviet delegations to the fishery talks have exerted great efforts to bring their talks to a successful conclusion. Our two countries are not merely neighbors. The Soviet Union and Japan are the world's largest fishing countries. I think the fishermen of our two countries can be proud of the fact that they are showing all other fishing countries an example of cooperation on that important question. Our fishery relationship already has a long history and is smoothly developing bilaterally as well as on a multilateral basis at various international [word indistinct] organizations. I wish to express the hope that the documents signed today will be a new stimulus for the further friendly development of fishery relations between our two countries. I believe that the growth [word indistinct] we felt will help further strengthen the state relations between our two countries in general. [end recording]

In reply, Japanese Ambassador Uomoto stressed that through mutual understanding, mutual respect and consideration of each other's interests, the two countries can find solutions acceptable to both sides. He went on to say: [Begin recording] "[words indistinct] with the advent of a new era of fishery order through the introduction of 200-mile fishery zones, Japan and the Soviet Union have made efforts to adapt themselves to this new age and to develop stable fishery relations. These efforts have had solid results. [words indistinct]."

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GREATLY INCREASED SOVIET COD CATCH OFF JAN MAYEN WORRIES NORWEGIANS

Oslo AFTENPOSTEN in Norwegian 14 Nov 79 p 5

[Article by Lennart Hovland: "Greatly Increased Soviet Catch of Cod off Jan Mayen"]

[Text] The importance of cod fishing in the waters off Jan Mayen has suddenly increased for the Soviet Union. If we had been able to manage to get an economic area around Jan Mayen in our negotiations with Iceland, that fact would have given us an important trump card which we could have played in our negotiations with the Soviets, Anders Talleraas (Conservative Party), More and Romsdal, a member of the Fishing Industry Committee of the Storting, has told the AFTENPOSTEN.

The Soviets caught nearly 180,000 tons of kolmule, which is a pelagic codfish nearly half a meter long, in 1978. This year they caught about 600,000 tons, which corresponds in quantity to the total amount of capelin which can be caught off Iceland and Jan Mayen. By way of comparison, put Norway's catch on the same level as the Russian's last year, while we only caught 250,000 tons this year.

What is involved is free fishing, and most of the catch is taken in the Norwegian Sea, which rates as international waters. Not a small part of that catch was taken in the waters around Jan Mayen, which could have been a Norwegian economic area if we had been successful in our negotiations with the Icelanders.

In a commentary, Talleraas says that not much is known about the rate at which kolmule are being caught. However, they are an important resource of which Norway is making an infinitesimally small amount of use for food at the present time.

"We must get international agreements which regulate the total quantity of that type of fish," says Talleraas, who adds that the Norwegians engaged in fish processing should pay some attention to the kolmule, so that it can be more profitable for us than it is at present.

"If we had had an agreement in regard to the area around Jan Mayen, we would have had a strong trump card to play in our dealings with our neighbor to the east," he points out, "in view of the Russians' great interest in the kolmule. The Soviets evidently have moved the part of their fishing fleet which no longer is finding enough fish in the Barents Sea over to fish for kolmule.

"On the other hand," he states emphatically, "this development can also involve big problems in regard to the establishment of a Norwegian economic area around Jan Mayen. Because of declining quotas for a number of fishing areas in the Barents Sea, Norwegian fishermen must look elsewhere and give their attention to other possibilities for making use of the resources of fish which are available," Anders Talleraas points out.

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NORWAY, SOVIET UNION AGREE ON COD QUOTAS

Oslo AFTENPOSTEN in Norwegian 17 Nov 79 p 10

[Text] Moscow, 16 Nov--The Soviet Union and Norway agreed Friday on a total quota of 390,000 tons of Norwegian Arctic cod next year. Net width for trawling is to be increased by 5 millimeters to 125 millimeters. Minister of Fisheries Eivind Bolle regards the result of the negotiations as acceptable, taken as a whole.

The cod quota is in conformity with what Norway was trying for, while the Soviet Union proposed a quota of 180,000 tons and in increase in net width that would be as little as possible. In line with recommendations by the International Council for Oceanography, Norway tried for a net width of 155 mm.

The two countries agreed on a total quota for capelin of 1.6 million tons, divided up with 60 percent for Norway and 40 percent for the Russians. Norway asked for a 70-30 percent division. There can be more capelin for Norway if there is agreement that Norway will get to fish for the capelin in the Soviet Union's quota which the Russians do not catch. The total quota for haddock was 75,000 tons.

Fisheries Minister Bolle says that the negotiations were difficult because the resources to be divided are limited. "It was important to get a reasonable cod quota. Even though we are somewhat disappointed because net width was not increased more than it was, that is a problem the two parties will continue to work on," Bolle told the NRK [Norwegian Broadcasting Corp] Friday.

The chairman of the Norwegian Fishermen's Association, Johan J Toft, is not as well satisfied with the result. The Fishermen's Association had, indeed, wanted to reduce the cod quota to 390,000 tons on the basis of a scarcity of resources, but Toft describes the agreement on increasing net width to 125 mm as disappointing. The Fishermen's Association would rather have seen the net width set at at least 135 mm because of the strict control of the number of fish caught in the Barents Sea.

"It is hard to make out with a cod quota as sharply reduced as the one it now is necessary to introduce. That implies an extremely sharp decrease in available resources, and with decreasing resources and increasing expenditures, it goes without saying that things will become difficult in the fishing industry," says Toft.

"In order to avoid a crisis in the Norwegian fishing industry now, it is necessary for the authorities to set up facilities for bringing in food until the resource situation--hopefully--changes for the better," says Toft.

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PRESENT COD QUOTA LEVELS WORK TO NORWAY'S DISADVANTAGE

Oslo AFTENPOSTEN in Norwegian 19 Nov 79 p 2

[Commentary by Graduate in Economics Thv Tande: "Free Codfishing in 1980"]

[Text] In an article in the AFTENPOSTEN recently on the negotiations regarding fishing in the Barents Sea, I pointed out that, according to their own statements on their catch, the Russians underfished the quotas assigned to them by considerable quantities in both 1978 and 1979. In 1978, as published, they caught 267,000 tons of Norwegian Arctic cod out of an assigned quota of 380,000 tons, and in 1979 they will catch about 100,000 tons out of an assigned quota of 325,000 tons. The reason is said to be a considerable redistribution of the fleet which normally takes part in the fishing for cod in the Barents Sea.

It has been claimed on several earlier occasions that a result of the introduction of 200 miles of economic areas which has been worrisome for us has been that the Russians have been excluded from a number of important fields, including some near Newfoundland and Greenland, and that they therefore have had to concentrate most on their cod fleet in the Barents Sea.

But the Russians also have big fishing areas in the Pacific Ocean. In the northwestern part of the Pacific, for example, 3.6 million tons of Alaska pollock, a fish resembling pollack, were caught in 1977. Of that quantity, 1.93 million tons were caught by Russians. In the northwestern part of the Pacific, 680,000 tons of Alaska pollock were caught that same year. Thus, a total of 4.3 million tons of that type of fish, or approximately 1.3 million tons more than a normal total quantity brought ashore in Norway, was caught, in all!

From what I have heard, the Russians are also carrying on a considerable amount of cod fishing today in the Pacific in almost virgin waters where the quantities of fish are said to be especially large.

If one assumes, as appears realistic, that the Russians will also distribute their fishing fleet in 1980 in approximately the same way as they

have done this year, they will be able to catch approximately 100,000 tons of Norwegian Arctic cod. If 40,000 tons are allotted to third countries, that will mean that 250,000 tons of the recommended total quota of 390,000 tons will be left. At the prevailing ratio, that will mean that we can permit free trawling north of the 62d degree of latitude of our trawlers without having the total catch of the Norwegian Arctic species of cod deviate significantly from the total quantity which is recommended by the oceanographers.

For 1980, the Norwegian Government should permit free fishing for Norwegian trawlers, or, alternatively, it should establish quotas for individual vessels which are high enough to insure a reasonable supply of raw materials to the industry, which consequently will be able to maintain employment. A reduction of the trawler's quotas by 40 percent in relation to the present year, such as is being talked about, would mean that over half--and perhaps two thirds--of the Norwegian trawler fleet would have to be laid up and that we would have a corresponding reduction in the supply of raw materials to the Norwegian fishing industry. Not much imagination is needed to realize what consequences that necessarily would involve.

There will be no reason to carry out strict regulation of our trawling for Norwegian Arctic codfish as long as the Russians underfish their quotas and as long as the overall catching of that species remains at a reasonable level in relation to the oceanographers recommendations.

In that connection, it is also worthwhile to be aware that during the current year we probably will make a total catch of Norwegian Arctic cod some 150,000 tons lower than the researchers' recommendations.

A regulation which would result in the Norwegian trawler fleet's getting its quota reduced by 40 percent is utter nonsense. That would only be regulating for the sake of regulating.

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## AUSTRALIA, USSR PLAN JOINT FISHING OPERATION

Perth THE WEST AUSTRALIAN in English 27 Oct 79 p 10

[Text] An Australian company will take part in a feasibility fishing operation off the north coast of WA, using three Soviet trawlers.

The operation is designed to assess the extent and distribution of prawns and surface and bottom-dwelling fish in deep water in the Dampier-Barrow Island area.

An Australian-owned family company, Craig Mostyn and Co Ltd, will work with a joint Soviet-Singapore company, Marisco (Pte) Ltd, to examine whether the fish can be exploited commercially.

The Federal Minister for Primary Industry, Mr Nixon, and the WA Minister for Fisheries and Wildlife, Mr O'Connor, announced the venture yesterday.

The trawlers will work in water between 150 metres and 1200 metres deep.

The companies think that there might be significant quantities of scampi—Dublin Bay prawns—in the area. Soviet fishermen are experienced in catching this or similar species.

### TECHNIQUES

The ministers said that Australian fishermen would be trained in catching and handling techniques and in procedures for producing oil and fish meal on board.

A company owned equally by the Craig Mostyn group and Marisco had been formed to market fish. It was Samleo Pty Ltd.

Products not bought by Australian companies could be exported, provided that at least 10 per cent of the catch was exported as "Product of Australia" to test the overseas markets.

The ministers said that accommodation would be provided in each trawler for Australian observers and fishermen.

The Soviet trawlers and crew were experienced in deep-water fishing.

### SQUID PROJECT

A joint Australian-Korean squid-fishing feasibility project off the WA coast has been approved by the State and Federal governments.

The WA fishing company Kailis and France will team with the Dong Won Fisheries Co of Korea.

Mr Nixon and Mr O'Connor said it was hoped that the project would help assess prospects for a WA commercial squid fishery.

The two companies were already involved in a fish trawling feasibility study off WA. The joint company, Australian Deep Sea Trawling Development Pty Ltd, would oversee the squid venture.

Eight feasibility fishing ventures have now been approved for WA waters.

INDIA ATTEMPTS TO CURB FISH POACHING BY OTHER NATIONS

Calcutta THE STATESMAN in English 30 Nov 79 p 3

[Text] Commodore A. C. Malhotra, Naval Officer-in-charge of INS Netaji Subhas, said in Calcutta on Thursday that the Indian Navy was intensifying its efforts to curb poaching of fish in the Bay of Bengal by trawlers belonging to foreign countries. He was addressing a press conference on board INS Kiltan, a naval frigate, which arrived at the Man-o'-War Jetty in the morning.

Commodore Malhotra said that every year fish worth Rs 30 crores was illegally caught in the Bay by trawlers which came from countries like Thailand, Japan and Taiwan.

He stressed the need for modernizing the Navy to keep pace with other countries. "We are a big maritime country, covering a coastline of about 3,500 km. He claimed that the Navy was helping the Government and commercial firms engaged in oil exploration on the high seas.

Commodore Malhotra said the main objective of the Navy Week, to be celebrated during the first week of December, was to make people aware of the Navy's activities.

A Navy Day reception would be held at the Navy House on December 4. A carnival would be organized on Strand Road near the Man-o'-War Jetty from Friday and would be open to people till Sunday from 11 a.m. to 8 p.m. Models of ships and photographs would be on display at the carnival.

The frigate, INS Kiltan, will be open to people at the Jetty on Friday and Saturday from 11 a.m. till sunset. There will also be a Navy Cup Race, Navy Ball and a Naval Band concert.

CSO: 5200

# ITALY'S JOINT FISHING VENTURES WITH LIBYA REPORTED

Messina GAZZETA DEL SUD in Italian 21 Nov 79 p 10

[Text] Palermo. The "question of fishing" in the Channel of Sicily is perhaps approaching a solution. The fact is that the Sicilian Region, through the ESPI [Sicilian Agency for Promotion of Industry] and the FRISPE [Regional Federation of Sicilian Fishing Enterprises] will soon set up a financial company whose function will be to establish mixed companies with the countries of North Africa which will engage in fishing and will also process and sell the fish products. This initiative is being taken in practical response to requests advanced by Tunisia and Libya.

The decision was made yesterday at a meeting held at the office of the Regional Assessor of Industry which was attended by the assessor, Grillo, the assistant secretary in the office of the president of the Council, Bassi, and representatives of the Ministry of the Merchant Marine--the General Directorate for Maritime Fishing--and of Sicilian shipping organizations belonging to FRISPE and ESPI.

Relations between the financial company to be established and Libya will be handled by the central government, according to an explicit request by Libya herself. Adherence was also made available to the other North African countries bordering on the Mediterranean, even though Libya is the only one which has agreed to it so far.

The representatives of the Sicilian shipping industry who took part in the negotiations with the central government predicted, for their part, that the Italian government's promise to ask the EEC to order the renewal of the fishing agreement with Tunisia negotiated will find a parallel in the concrete desire for a settlement of fishing relations with Libya which has been demonstrated.

Grillo, the regional assessor of industry, on the other hand, issued the following statement:

"This agreement, which has been initialed by the region, the Ministry of the Merchant Marine and the shipping industry, certainly constitutes the beginning of a change for the better in relations in the Mediterranean in regard



to fishing, which have been so troubled, and sometimes even tragic, in the past. Whereas, in fact, this constitutes the first step, on the one hand, toward establishing a mixed Italo-African company in which the initiative was taken and readiness was displayed by the public and private entrepreneurs of the Sicilian Region, we believe that a new relationship between our country and those located on the African coast may come into being. There are basic factors which are going to give fishing activity a new aspect, and which, I enthusiastically predict, will contribute to making the dangerous tension which has characterized recent times drop off in intensity.

"The region," the honorable Mr Grillo went on to say, "wanted to give a prompt and dedicated proof of its sincerity, and the private businessmen responded with equal promptness and dedication. Now it is up to the government to contribute, not only in the diplomatic area but also by participating as an associate. This is a proof which, after many failures and disappointments, cannot fail, and which we asked for expressly.

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ITALIAN FISHING VESSELS ATTACKED BY GUNFIRE NEAR LIBYAN COAST

Palermo L'ORA in Italian 15 Nov 79 p 10

[Article by Giuseppe Pirrello: "The Fishermen's Story--Under Fire From Libyan Machine Guns for Three Quarters of an Hour"]

[Text] Mazara del Vallo. The fishing vessel "Nicola Lisma" is now in the canal harbor of Mazara del Vallo. The bullet holes--there are about a hundred of them--are quite visible in its starboard side. The episode, which could have assumed the dimensions of a massacre, took place, according to the testimony of the crew members, 36 miles from the Libyan-Tunisian coast in the vicinity of the Gulf of Gabes, where the Italian drilling platform Scarabeo II is carrying on the ENI's [National Hydrocarbons Agency's] search for oil on behalf of Libya.

Those waters are also claimed by Tunis, which has frequently asked Italy to stop the search for petroleum. As can easily be inferred, all the necessary conditions exist which would lead one to imagine that one of the two countries wanted to create an "incident" which would arouse international interest. But the fact that is emerging, leaving aside the official versions of the story, in what is being said by those who live in the world of seafaring men, is different. There it is said that "the patrol vessel which fired on the Nicola Lisma for a good three quarters of an hour could not be anything other than Libyan. The proof of that is the fact that the direction from which it came undoubtedly was the direction of the Libyan coast."

A captain who has undergone machine gunnings in the past affirms: "If it is right to condemn someone who takes action by force of arms against someone who is unarmed and is unable to defend himself, it is also right to regret that, right at the present moment when 13 sailors are awaiting the verdict of the Libyan court after a good 8 months of enforced residence in Tripoli, there are fishermen who trespass, for we can state plainly that it is not Libyan patrol vessels which fire when we are in international waters."

So the possibility exists that the situation of the sailors whose trial begins in Tripoli today might be aggravated, and that the truths which for years have scarcely been whispered might finally come to the surface. Meanwhile, the

seriousness of the situation in the fleet of Mazara del Vallo is assuming darker and darker contours. After 12 years, the shipping companies decided to meet with the trade unions to discuss the draft of the new work contract. At the second meeting, the negotiations were broken off for the following reason: "The shipping people," the trade unions say, "demonstrated a superficial attitude. They wanted to remove the sense and the seriousness from the negotiations."

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## WORLDWIDE AFFAIRS

### BRIEFS

SOVIET-NEW GUINEA COOPERATION--Port Moresby, Monday.--A Soviet Government agency may undertake fisheries research in PNG waters, the Government revealed today. It said two senior officials of the Soviet Union's commercial fishing authority, Sovrybflot, would visit Port Moresby this week to discuss the possibility of a Sovrybflot ship undertaking fisheries research inside PNG's 200-mile resource zone. [Text] [Sydney THE SYDNEY MORNING HERALD in English 30 Oct 79 p 19]

ECUADOR INCREASES FISHING CONTROL--It has been officially announced that the government has ordered an intensification of the fishing controls on foreign ships operating within Ecuador's 200-mile territorial waters to prevent excessive and illegal fishing. The government believes the safeguarding and rational use of the country's wealth is of the greatest importance. The territory, including the sea area and the continental shelf within the 200-mile limit, is 1,060,000 square km. It has great wealth in its waters, soil and subsoil, which is under state control. [Text] [PA072207 Quito Voz de los Andes in Spanish 1230 GMT 7 Dec 79 PA]

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## INTER-ASIAN AFFAIRS

### AUSTRALIA, TAIWAN AGREE ON FISHING CONTROLS

Brisbane THE COURIER-MAIL in English 3 Nov 79 p 3

[Text] Lindeman Island. -- The Commonwealth and the Governments of Queensland, Western Australia, and the Northern Territory have reached agreement on continued fishing by Taiwanese vessels off the north and north-west coasts.

The Taiwanese authorities have pledged to control strictly the activities of their fishermen.

In particular, the Australian negotiators insisted on the cessation of illegal operations by clam boats along the Great Barrier Reef.

Details of the proposals were released yesterday by the Primary Industry Minister (Mr Nixon), the West Australian Fisheries and Wildlife Minister (Mr. O'Connor), the Queensland Maritime Services and Tourism Minister (Mr. Hooper) and the Northern Territory Industrial Development Minister (Mr. Steele).

Under the arrangements, which will apply for a year, 60 pairs of trawlers will be licensed to catch 27,500 tonnes of fin fish and sharks for a fee of \$825,000.

A further 30 smaller vessels will be licensed to take 7000 tonnes of pelagic fin fish and sharks for an access charge of \$159,600.

#### Reduction

Agreements have been signed with the Kaohsiung Fishing Co. Pty. Ltd. -- a partnership of M. G. Kaila Gulf Fisheries Pty. Ltd. and the Kaohsiung Fishing Boat Commercial Guild of Taiwan.

The Ministers said the allocations represented a

reduction of about 50 per cent in the total catch taken by Taiwanese fishermen off the north and north-west coasts in the last few years.

The cut was necessary because of concern about the over-exploitation of resources and the need to allow feasibility fishing studies by Australian and foreign companies.

#### Sole right

Consideration also had to be given to proposals for access by other countries to the North-West Shelf resources.

The Kaohsiung Boat Commercial Guild which incorporated a big number of companies, had been given sole right by Taiwanese authorities to decide which vessels

could apply for licences to fish in Australia's 200 nautical mile fisheries zone.

The Ministers said the agreements made the company or the guild responsible for ensuring that all Taiwanese fishing activities in the zone were according to Australian laws and regulations.

#### 'No problems'

Addressing the Australian Fisheries Council at the Barrier Reef resort of Lindeman Island yesterday, Mr. Nixon rejected claims that the 200-mile fishing zone would present Australia with a surveillance nightmare.

He told the council, which represents the Commonwealth and all

States, that most of the important Australian fisheries resources were within about 40 nautical miles of the coast.

Any unlicensed foreign vessel intruding into the zone would have to travel about 160 nautical miles before it could start fishing and would then have to stay in the area for some time to make it worthwhile.

### **A buffer**

This increased the chances of detection by patrolling ships and aircraft and by Australian and foreign-licensed fishing vessels.

The zone would act as a buffer between the outer sea limits and the established fishing grounds, he said.

Mr Nixon said long-line fishing boats operating in the game fishing grounds off Cairns would have to report their position every six days.

They would have to be available for inspections and to take on Australian observers to monitor marlin catches.

### **Was vital**

The council has also demanded a say in any decision concerning fishing activities within the new marine parks.

Mr Hooper said it was vital that the council had a say because of the position regarding the situation with fishing grounds adjacent to marine parks likely to be proclaimed in the future.

## INTER-ASIAN AFFAIRS

### BRIEFS

**JAPAN UNAFFECTED BY TAIWAN ZONE**--Tokyo Dec 4 KYODO--Japanese fishing boats will not be affected by Taiwan's 200-mile exclusive zone that went into force October 8, according to a government official. Replying to an opposition questioner at a Diet committee session Monday night, a Foreign Ministry official said Taiwan has made clear that its exclusive zone will not apply to those countries which have exempted Taiwan from their 200-mile zones. The official said: "It is our understanding that the latest Taiwan action does not affect Japan, which has not set up a 200-mile zone in the East China Sea." [Text] [OW040207 Tokyo KYODO in English 0008 GMT 4 Dec 79 OW]

**SOUTH KOREA TO CURB HOKKAIDO FISHING**--Tokyo Dec 1 KYODO--The South Korean Government informed Japan Saturday that South Korean fishermen will voluntarily curb fishing off Hokkaido. The notice from the South Korean Foreign Ministry said Korean fishermen will keep away from waters three miles farther from Japan's 12-mile territorial limit off the Pacific coast of Hokkaido, Fisheries Agency officials said. On the Sea of Okhotsk, the South Koreans will voluntarily stay five miles farther from the limit. The South Korean concessions followed a Japanese protest over an estimated yen 600 million in damage done by South Korean fishermen to Japanese fishing nets and other gear. The Soviet Union's declaration of 200-mile economic zone forced South Korean fishermen to divert to Japan's traditional fishing grounds. [Text] [OW010422 Tokyo KYODO in English 0400 GMT 1 Dec 79 OW]

**KOREA-JAPAN FISHERY TALKS**--Seoul, Dec 6--Korean and Japanese fishery leaders agreed in principle to increase the compensation amount for damages on fishing tackle in marine accidents between fishing vessels of the two countries, as from April 1 next year. In preparation for the hikes, they also agreed to exchange basic data by the end of this year. The agreement was made at the 13th meeting of the Korea-Japan private joint fishery committee held in Seoul Tuesday and Wednesday. At the two-day Seoul meeting, they pledged to exert their best efforts to prevent fishery disputes on the jointly regulated fishing zones. At the Seoul meeting, the Japanese side agreed to pay 23 million yen in compensation for the collision incident between Korea's No 1 Changwon-ho and Japan's No 6 Kensei Maru, while the Korean side has decided to pay 500,000 won for damages inflicted by a Korean fishing vessel on the fishing tackle of Japan's No 53 Katae Maru,



and 700,000 won for damages on the fishing tackle of the Kaiko Maru and seven other Japanese fishing vessels, informed sources here disclosed. [Seoul HAPTONG in English 0246 GMT 6 Dec 79 SK]

TAIWANESE IN AUSTRALIAN WATERS--Canberra.--The first Taiwanese fishing boat caught inside Australia's new 20-mile limit has been towed into Darwin harbor. The boat, the tenth Taiwanese vessel caught in Australian waters this year, was found off Melville Island, north of Darwin, on Sunday night. The skipper and crew are being questioned. [Text] [Melbourne THE AGE in English 6 Nov 79 p 3]

TOK-TO FISHING ISSUE--Tokyo Dec 20 KYODO--Foreign Minister Saboro Okita said Thursday that Japan would raise the question of Japanese fishing in safety around Takeshima Island in the Sea of Japan at the next though still undecided Japan-South Korea regular ministerial conference. Answering a socialist questioner in the House of Councillors audit committee, Okita said Japan hopes to settle trouble over fishing around the island, called Tok-to by Koreans, in the context of overall relations between the two countries. Japan and South Korea agreed to try to prevent fishery troubles at their previous regular ministerial conference held in Seoul in September last year but troubles involving Japanese fishing boats have occurred since then, according to the Foreign Ministry. The 11th ministerial conference, originally scheduled to be held in Tokyo this month, was put off due to the situation created by the assassination of South Korean President Pak Chong-hui in late October. [Text] [Tokyo KYODO in English time not given 20 Dec 79 OW]

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## AUSTRALIA

### PRESS REPORTS REACTION TO NEW FISHING AGREEMENTS

#### Fishing Industry Council

Sydney THE SYDNEY MORNING HERALD in English 26 Oct 79 p 2

[Text]

CANBERRA. — The Australian Fishing Industry Council has told the Federal Government it is grossly dissatisfied with the Australian-Japanese fishing agreement.

At its annual general meeting which ended yesterday, the council devoted all its time to discussing the agreement and similar arrangements initialled with South Korea and Taiwanese interests.

Under the agreement with Japan, which takes effect from November 1, Japanese long-line tuna boats will be allowed to fish certain areas of the east coast of Australia for a fee of \$1.4 million. The arrangement is renegotiable in 12 months.

The president of the council, Mr F. A. Connell, said yesterday the Japanese had "taken Australia to the cleaners" with the agreement.

The Japanese were being asked a pittance to harvest \$30 million of fish, mainly the high-quality bluefin tuna, in the Australian fishing zone.

"An Australian industry based on this tuna has the potential to rival the lobster, abalone and prawn industries.

"It is utterly irresponsible for the Government to sign away valuable fish stocks that will be the basis for a major Australian operation," he said.

In particular, the council was disturbed that the Government had not seen fit to consult the fishing industry when it negotiated the detailed arrangements flowing from the agreement.

## Victorian Fishermen's Complaints

Melbourne THE AGE in English 26 Oct 79 p 12

[Text] Victorian fishermen believe they have been sold out by the Commonwealth's fishing agreement with Japanese companies, Parliament was told.

The Opposition spokesman on agriculture, Mr. Bill Fogarty, moved an adjournment motion censoring the Government's "failure to protect the interests of the Victorian fishing industry and consumers."

He called on the Government to exercise greater control over joint fishing ventures.

The former Conservation Minister, Mr. Borthwick, defended the joint operation.

The Australian industry had much to gain from the system, he said.

He said the Japanese were providing \$120,000 for equipment to train Australian fishermen and the Japanese research vessel would be available in the Commonwealth next year with Australian officers on board.

The National Party voted with the Government and the Opposition motion was defeated on party lines.

## Fish Resources 'Sold Out'

Brisbane THE COURIER-MAIL in English 25 Oct 79 p 25

[Text] The Australian Government was selling out the country's fishing resources to foreign interests at the expense of local fishermen, a company manager claimed yesterday.

Harlindale Queensland Pty. Ltd. manager (Mr. Ray Hawk) said his company had been formed two years ago to fish for tuna and amckerel from Townsville to Papua New Guinea.

So far, after an outlay of \$70,000 and with a contract from a Japanese company to buy fish, not one fish had been caught.

Mr. Hawk said the company had planned to run a purse-seine operation — which involves large nets, up to 2 km in diameter — and process the fish caught.

The company had \$600,000 towards six purse-

seine boats, and wanted the Government to loan it \$1 million, but Mr. Hawk was told a month ago he had no chance of getting the money.

"We would pay back the money in two years," he said yesterday.

### \$15m. yearly

Extensive and costly feasibility studies had

shown the company would return \$15 million a year into the Australian industry.

"We would employ 200 people straight away and increase that to 1500 in two years," Mr. Hawk said.

He said the State Maritime Minister (Mr. Hooper) was speaking "rubbish" when he said Korea, Taiwan and

Japan were the only countries involved in proposals to license foreign fishing.

Korea had signed an agreement three months ago, and the United States had signed one six months ago.

"Mr. Hooper says Australian fishermen have no operations in those areas," he said.

## Fishing Checks 'Critical'

Brisbane THE COURIER-MAIL in English 1 Nov 79 p 12

[Dispatch from a Staff Reporter]

[Text]

### TOWNSVILLE

Close monitoring of Japanese long-line fishing operations off North Queensland was critical, the Foreign Minister (Mr. Peacock) said yesterday.

He was questioned about Australia's 12-month fishing agreement with Japan.

Mr. Peacock said the Primary Industries Minister (Mr. Nixon) had made it clear to the Japanese that monitoring would occur during the 12-month agreement.

"The undertakings we have given on monitoring should put the minds of North Queensland fishermen at rest," Mr. Peacock said.

The agreement looked after Australia's general interests, not just those of Queensland.

Monitoring would put Australia in a strong position when the agreement came up for renegotiation.

### Close in

Mr. Peacock said few people realised that, although a 200 nautical mile territorial border had been set, most fishing took place within 30 miles of the coast.

This would make surveillance easier.

He said about 80,000 square miles of waters off North Queensland had been excluded from the agreement.

The agreement indicated the close economic relationship between Australia and Japan, the country's major trading partner.

# NAVY CHECKS ON REPORTED LANDINGS BY FOREIGN FISHERMEN

Perth THE WEST AUSTRALIAN in English 25 Oct 79 p 5

[Text] Canberra: A naval patrol boat based at Darwin will visit islands in the Sunday Island Strait, off Derby, next month to check on reports of unauthorised landings by foreign fishermen.

The vessel will visit the islands about November 6 during a scheduled patrol of the area.

The Australian Coastal Surveillance Centre in Canberra has received conflicting reports about foreign fishermen in the area.

One report claimed that Indonesian fishermen in small canoes were operating in the Sunday Island Strait.

But a surveillance aircraft asked to check on the claim reported seeing only two dinghies containing Aboriginal fishermen.

## FOOTPRINTS

WA health authorities are thought to have seen footprints in the sand and a discarded fishing basket on one of the islands in the group.

Defence Department officials said last night that some small fishing boats had been seen last week near Roe Island, in the Sunday Island Strait group.

It was not known

whether the boats were manned by Indonesian or Aboriginal fishermen.

The patrol boat would visit the area to check on the conflicting reports.

## LABOR VIEW

In PERTH, the WA Opposition said yesterday that the sighting of a foreign fishing boat in northern WA waters in the past week showed the need for more surveillance.

The Leader of the Opposition, Mr Davies, said that the boat seen in the Sunday Island Strait was thought to be Indonesian.

The fishermen were thought to have landed on at least one island in the strait and to have left debris, he said.

Their landing could pose a serious health risk for people in the area.

The Bardi community at One Arm Point had spotted the intruders and reported the sighting to authorities, expressing alarm at the intrusion.

The boat's presence had been confirmed last Thursday by aerial surveillance, Mr Davies said.

## TROCHUS SHELL

The fishermen had been fishing for trochus shell.

Their activities posed an economic threat to the Bardi community, which was trying to establish a trochus fishing industry to make itself less reliant on social service payments.

Repeated foreign incursions for trochus shell would threaten the community's prospects of establishing an economic project.

Mr Davies said that neither Federal nor State authorities had been able to act to ensure that there was no health threat or to move the boat.

There was no naval boat in the area and the WA Government did not have a boat there.

The Minister for Fisheries and Wildlife, Mr O'Connor, said he had not heard of the incident.

It would worry him if the reported events had occurred. He would ask the Commonwealth to take action.

The Minister for Health, Mr Young, declined to comment.

## AUSTRALIA

### BRIEFS

**NEW SEA LAWS--**Canberra.--The Federal Crimes at Sea Act, which will enforce Australian criminal laws in Australian controlled offshore areas, will come into effect next Thursday. The Attorney-General, Senator Durack, said yesterday the enactment would end long-standing confusion about which laws applied to ships traveling in Australian waters. Senator Durack said the Privy Council pointed out in 1977 that Australians who crossed the Bass Strait from Melbourne to Launceston were still governed by English criminal law. The Attorney General said that under the act it was up to the States to legislate for offences committed on voyages between two ports in one State, or where a particular voyage began and ended at the same port in a State. An Australian ship on an interstate voyage would be subject to the law of the State where the ship was registered. [Text] [Melbourne THE AGE in English 27 Oct 79 p 11]

**MONITORING OF LONG-LINE FISHING--**A committee to monitor and advise on long-line fishing has been set up by the Federal Primary Industries Minister (Mr. Nixon). The State Maritime Services Minister (Mr. Hooper) said yesterday that Mr. Nixon wanted the committee to advise him on research into the effects of the Japanese long-liners on game fish stocks. Mr. Hooper said Queensland sport fishermen would be represented on the committee. [Excerpt] [Brisbane THE COURIER-MAIL in English 30 Oct 79 p 14]

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# FISHING GROUP SCORES LICENSING OF JOINT VENTURES

Canberra THE WEEKEND AUSTRALIAN in English 27-28 Oct 79 p 14

[Report from Stuart McMillan in Christchurch]

[Text] **S**TRONG criticism of the number of joint fishing ventures being licensed by the New Zealand Government has been made by one of the fishing groups already licensed.

It is likely to fall on deaf Government ears. After two years of the 200-nautical mile zone — the legislation was put in place in April this year but a declaration made last October — the thrust of Government policy is now clear.

Joint fishing ventures are being used to involve New Zealanders in as much of the zone as possible.

Under the law of the sea the coastal State has to provide access to other countries if it cannot use the fish resources of its 200-mile zone.

The total allowable catch in New Zealand waters has been estimated, although not officially announced as such, at 500,000 tonnes.

New Zealand's traditional fishing fleet has been an in-shore fleet. The total catch last year was estimated at

80,000 tonnes and at 100,000 tonnes for this year.

There was no way New Zealand could pretend it could take anything like 500,000 tonnes. New Zealand has had foreign fishermen around its shores since 1957.

This season, the Government will collect \$7.8 million for the 236 foreign ships licensed. The Government came in for some criticism from fishermen over the licensing of foreign fishermen in such numbers.

This became more pronounced when access to fishing rights was made a bargaining lever in negotiations with Japan over access to markets for agricultural produce.

Charges of giving away a resource for trade access were made. The Government's intention was to phase out the foreign fishermen as soon as possible.

But with a fishing fleet of its own that could not go into the deeper waters far from the coast, substitution by New Zealand fishermen of foreign fishermen was not possible in the short term.

The New Zealand fleet has been expanding rapidly and has grown by 25 per cent in the past year. But it was still not enough.

Arrangements have been made among New Zealand firms, West German and Korean firms and with the Soviet fishing agency, Sovrybiot, and deals are being negotiated with the Japanese.

The foreign fishermen do not sell on the local market. Some fish appeared on the New Zealand market from foreign fishermen and caused a row.

But the drive in joint ventures and New Zealand ventures has been toward export. New Zealand earned \$64 million in fish exports last year. The main markets are Japan, the U.S. and Australia.

Export markets have not grown as expected, although the Fishing Industry Board considers this a short-term problem.

The joint ventures give better access to markets and that is another reason for believing they will be around for some time.



## PHILIPPINES

### GOVERNMENT CONSIDERS LIMIT ON ALIEN FISHING

Manila PHILIPPINES DAILY EXPRESS in English 12 Dec 79 p 15

[Text] The government will limit the fishing activities of foreigners in Philippine waters as part of an overall fishing strategy for the 1980s, according to Natural Resources Minister Jose J. Leido Jr.

Foreigners will be allowed only to fish for certain species up to a certain volume in defined fishing areas, Leido said. The rule will be applied within the country's 200-mile exclusive economic zone.

The country's declaration of the exclusive economic zone is expected to deprive fishing boats from Japan, Korea, Taiwan and Thailand of their customary fishing grounds. This guided the formulation of the new government policies on fishing activities of foreigners in Philippine waters, Leido said.

Leido said his ministry will also push for a more efficient management of internal seas through regionalization of fishing license. This is meant to avoid overinvestment and overfishing in some areas.

He also bared the following new programs for the coming decade:

- The aggressive exploitation and development of undeveloped species like squid and mussel.
- The intensification of aquaculture activities because they are less fuel-dependent.
- The pursuit of all types of shrimp farming.
- The stabilization of the supply of inputs to aquaculture. The most critical input is the supply of bangus fry.

(SO: 5000)

SOUTH KOREA

BRIEFS

SEIZURE OF KOREAN BOATS--Ten Korean deep-sea fishing boats were seized by foreign authorities for illegal fishing operations between January and August this year, the Korea Maritime and Port Administration reported yesterday. The KMPA's report to the National Assembly revealed that these ships had paid a total of \$2,980,000 to foreign governments in fines. The ships were punished mainly for operating within the exclusive fishing zones of foreign countries, continuing operation beyond permitted periods or using unauthorized sizes and shapes of nets. The report said the KMPA would strengthen control of overseas fishing operations and take stern measures against crewmen at fault, depriving them of their licenses. [Excerpt] [Text] THE KOREA TIMES in English 21 Nov 79 p 8]

FISHERIES MISSIONS--Seoul, 27 Dec (HAPTONG)--South Korea will send negotiation and survey teams to the United States, Brazil, Australia, New Zealand and India next year to enhance fishery cooperation with these coastal nations, sources at the office of Fisheries said today. For the same purposes, fishery officials from seven countries including Guyana will be invited to visit Korea next year, the sources said. The office will also undertake the training programs for 18 trainees from 17 countries including Chile next year, the sources said. Meanwhile, the office has set the fishery production goal for next year at 2.7 million tons and the 1980 export target of fishery products at one billion dollars, the sources revealed. [Text] [SK270314 Seoul HAPTONG in English 0246 GMT 27 Dec 79 SK]

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## INTER-AMERICAN AFFAIRS

### BRIEFS

HONDURAN BOATS SEIZED IN NICARAGUA--Managua--Two Honduran fishing boats were captured while operating in Nicaraguan waters, revealed Manuel Rivas, an official of the Ministry of Defense. Rivas said that one of the boats, identified as Castillo Tres, was captured last week while fishing 12 miles inside Nicaraguan territorial waters near Cape Gracias a Dios. The four-man crew had been doing a great deal of fishing, especially for shrimp. The boat was taken to the port of Bluefields where it is in the custody of the Sandinist popular army. Rivas said the crew of the Castillo Tres is under arrest. In addition, there is a possibility that they may be fined \$10,000. Their death has been confiscated. The other boat, identified as Anita L, was captured 2 days later, also 12 miles north of Bluefields. Its crew was engaged in piracy. [Text] [PA040347 Managua Radio Sandino in Spanish 1200 GMT 30 Nov 79 PA]

CSO: 5200

## RED SEA MINING A COMMERCIALLY FEASIBLE IDEA

Jiddah SAUDI BUSINESS in English 30 Nov 79 pp 7-10

[Article by Timothy Sisley]

[Text]

Seabed deposits of zinc, copper, silver and other minerals between Saudi Arabia and Sudan exist in quantities that justify deepsea mining, according to a report recently presented to the Saudi-Sudanese Commission for the Development of Red Sea Resources.

The most promising area covered in recent exploration — the seabed muds known as Atlantis II Deep — is estimated to contain about \$ 3.5 billion (in constant 1970 prices) of minerals.

"The information which we have to date shows that at today's prices and costs this one mine is more attractive than the majority of land mines," says Zaki Mustafa, the Sudanese secretary general of the Commission.

Mustafa describes Atlantis II Deep as "a medium-size mine with a life of approximately 20 years."

Income from the mine at today's prices and with a 20-year life would amount to SR680 million a year.

The report was prepared by Bureau de Recherches Geologiques et Minieres (BRGM), the French firm acting as technical consultants to the Commission, and was presented for approval last month.

The report says there are probably 2.5 million tons of zinc, 600,000 tons of copper and 9 million kilograms of silver in Atlantis II Deep, with slightly more than half of these amounts available for extraction.

Mustafa says that the initial cost of setting up a mining operation would be SR1 billion, involving building a rig, flotation cells to separate the mineral-bearing muds from the mass of tailings, a pipeline or barge link to the land and a processing plant on land.

"If all goes well we hope to be in a position to start production by the mid-1980s," Mustafa says. With the competition mainly of consortia formed by large international companies mining manganese nodules in the Pacific, he also hopes that "we will be the first organization in the world to put seabed metals onto the market."

The Commission has also been holding talks with the Royal Commission for Jubail and Yanbu "with a view to locating a processing plant in the Yanbu industrial complex, in the hope that our metals and byproducts would provide base elements and raw materials for a number of industries within the complex."

For all that the progress sounds smooth, it is no good having all that metal at your fingertips if it is just out of reach, and the Commission has had to mount a parallel effort of developing technologies to extract the muds from depths of over 2,000 meters.

"There was no technology when we started for mining deposits of that nature at that depth," Mustafa says. The Commission had to develop a mining system that relies on a hydraulic pipe with a rotating and vibrating suction head to bring muds to the surface, and a system of flotation of mixed deposits on site to produce a concentrate that would be economical to transport.

Mustafa says the Commission created the first series of sea-borne flotation cells. "All have been tested at sea, on site, and their performance was excellent."

At the same time "we have been engaged in developing the necessary technology relating to the processing of minerals recovered. We started from a point where there is no technology in existence for handling an ore body as difficult and as complicated."

Working with the Norwegian company Elkam, Minimet of France, Davy Power and Gas of Britain and Duval of the United States, as well as the West German prime contractor to the Commission, Preussag, "we have succeeded in obtaining some very encouraging results. We are still waiting for the final report before deciding which process to opt for."

"Provisional results indicate that we may be able to have an economically attractive processing method and that we may be able to recover some of the other elements that are mixed in the deposits."

The muds vary in thickness from 11 to 30 meters, and contain 17 metallic elements: zinc, silver, copper, cadmium, mercury, gold and iron are the most economically attractive. They lie in hot brine deeps, of which 18 have been discovered in the central rift zone between Saudi Arabia and Sudan. The Atlantis II Deep is slightly south of due west of Jeddah, halfway between the two coasts.

There have been fears that commercial exploitation of the Red Sea's resources could endanger the sea's environment. Mustafa dismisses them.

"We have spent more time, money and worry on the environment than on all other activities combined," he says. "It is our policy that our activities should not ruin the environment. If we came to the conclusion that they would do irreparable damage, then we would not mine."

As part of what Mustafa describes as a "fairly comprehensive program" of environmental research, the Commission has carried out studies of the Red Sea's environmental conditions. It has made experiments with injecting mud deposits into limited areas and monitoring their effect, and feeding the results into a computer. It is also using landsat photography to trace the effect of the discharge of tailings on the surface.

A patent has been applied for on a technique the Commission has devised for returning the tailings into deep sea, avoiding surface pollution.

"We are trying to cooperate with a wide group representing the best available expertise" in environmental control, including regional and international bodies. The Kingdom's new environmental body, the Directorate General of Meteorology's Meteorological and Environmental Protection Agency, is to collaborate with the Commission to set up onshore monitoring stations.

Mustafa says that there is no overlap with traditional fishing grounds: "The area is very hostile to marine life. The sea is hot and saline and we can hardly detect any."

"What we are worried about is the drifting of tailings or material from disturbed deposits to fishing grounds or reefs. Results so far say that this will not happen."

"Right now," Mustafa says, "preliminary results indicate we would be able to engage in mining and in the disposal of tailings without causing any serious damage to the environment."

The Commission claims that its researches into environmental conditions have given it a stock of more information on the Red Sea than any other organization, as well as an extensive background of laboratory work.



The Commission is proud of its record of technical development and transfer. According to the recent report, five patent applications have been filed arising from its work, all concerned with mining equipment and methods. Another 10 or 15 applications for advances to be patented in offshore technology, processing and metallurgy will eventually be submitted. The Commission will own or share ownership of most, according to the proportion of contribution to the work with contracted companies. Dr. Zuhair Nawab, the Saudi deputy secretary general of the Commission, a young geologist, says that the Commission has 14 senior staff, with most analytical work being subcontracted by Preussag to laboratories in Europe. But 60 Saudi and Sudanese technical staff from universities, the government and environmental institutions have so far been taken for training.

"It is our feeling," Mustafa says, "that they have been given a much deeper insight. Our hope would be that we are preparing the necessary manpower to recruit for production." Reports on them have been encouraging, and there are hopes future stages of work can eventually be progressively Saudi-Sudanized.

Foreign companies have been mainly used so far, working from chartered research vessels, but the Commission has been going to the local market for geophysical and oceanographic work.

The Arabian Geophysical and surveying company, a joint venture between Petromin and the French Compagnie Generale de Geophysique, has been working for the Commission since 1976. Mustafa describes the results as being of "excellent quality."

Oceanographic institutes at King Abdul Aziz University and in Port Sudan, as well as MEPA, have been taking part. For now, though, BRGM acts as technical consultant, supervising, controlling and training.

The Commission was set up in 1975, with the minister concerned with minerals from each country heading the governing board. Saudi Arabia is paying the costs of the economic and technical feasibility study that is due to end in 1981, although Mustafa says it has not yet been decided whether the expected earnings will be split 50-50 or if the Kingdom will be repaid before Sudan starts profiting.

The Commission has so far spent SR100 million, with an estimated SR250 million to come.

Mustafa says that there is no difficulty over the legal position of the Commission's research and possible future exploitation. Both governments feel "adequately covered," as the Commission's work would satisfy whatever principles may eventually be decided for rights to offshore resources — territorial waters, an exclusive economic zone, an extended continental shelf or a closed sea.



RED SEA MINERALS TO BE PROCESSED AT YANBU

Jiddah ARAB NEWS in English 23 Nov 79 p 2

[Article by Timothy Sisley]

[Text]

JEDDAH, Nov. 22 — With almost conclusive evidence that commercially exploitable minerals are lying on the floor of the Red Sea, the Saudi-Sudanese Commission for the Development of Red Sea Resources is examining the possibility of cooperation with industries to be established at Yanbu.

Dr. Zaki Mustafa, the Sudanese secretary-general of the commission, told *Saudi Business* in an interview to be published in full Saturday that in one area alone "preliminary indications are" that it could be more profitable than most land mines. Exploration and research is now concentrating on the Atlantis II Deep, a field midway between Jeddah and the Sudanese coast line.

In that Deep, Mustafa says, there are major deposits of zinc, silver and copper.

According to a report presented last month to the commission by the research team, at the prices that obtained in October 1979 the Deep could yield SR680 million a year for 20 years. Mustafa said that the commission's development of techniques of extraction and separation of the mineral-bearing muds from the minerals themselves has progressed to the point where commercial exploitation could begin by the mid-1980s.

"We hope," he said, "that we will be the first organization in the world to put seabed metals onto the market." The competition is mainly from consortia of large international companies working on the extraction of manganese nodules from the Pacific.

The Saudi Arabian assistant secretary-general of the commission, Dr. Zuhair Abdul Hafiz Nawab, told *Al-Madina* Thursday that his organization wants to set up processing plants in Yanbu. The commission and the Royal Commission for Jubail and Yanbu have been in touch, and will hold talks shortly.

"If the project goes ahead," he said, "it will save the Royal Commission the cost of importing raw materials to be refined at Yanbu. The minerals involved include zinc and copper and others believed to be available in the Red Sea." He added that "so far tentative trials have shown an abundance of silver on the sea floor." Final reports would be available in May.

SIGNIFICANCE OF DISCOVERY OF MANGANESE NODULES DISCUSSED

Paris DEMAIN L'AFRIQUE in French 19 Nov 79 p 62

[Article by Jean-Philippe Riviere: "The Nodule Treasure"]

[Text] Located to the east of Madagascar, will Reunion, whose economy is based primarily on agriculture, one day raise itself to the class of the major world producers of raw materials? From the island's capital, news of a sensational nature announced last October 6 the discovery of a very large deposit of manganese nodules of uncommon thickness off its coasts but within its exclusive economic zone. These lumps of minerals carpeting the ocean floor are supposedly formed of cobalt, copper, and nickel. As a result the controversy on these as yet mysterious concretions which stud the great depths and on the problems raised by the issue of who owns the ocean beds and the exclusive economic zones in the Indian Ocean has been relaunched. Because of the island's geopolitical situation, Africa has found itself thrust onto center stage with this affair.

Suddenly announced with the blare of trumpets, the discovery of these manganese deposits of Reunion needs to be put back into a reliable context if we want to take its true measure.

First, it seems an exaggeration to talk about a discovery in the strict sense of the word. The "Marion Dufresne," assigned to liaison with "French Austral and Antarctic Territories" (TAAF), has been spending several months in the Indian Ocean for the last 5 years. Teams of geologists, headed by Mr Leclaire, have long been taking an interest in the nodules, of which they were aware of the presence off the coast of Reunion. However, during the "Marion Dufresne's" last trip, they resorted to a new, high-powered sample collector and their statements, at the beginning of October, merely make note of the outcome of 5 years' work. Moreover, notwithstanding their remarkable density (as much as 100 kilos per square meter compared with 5 to 10 kilos per square meter in the Pacific's more familiar deposits), the nodules of Reunion's exclusive economic zone are still of quite relative significance, because of their low cobalt, copper, and nickel intensity (the only minerals of interest in these concretions, for the time being):

1/2 to 1 percent compared with 2 and 1/2 percent for the Pacific's. Then Reunion's nodule affair can be put back into a French political context. Last 13 to 20 September a conference sponsored by the French Secretariat for Overseas Departments and Territories (DOM-TOM) and assembling sizable delegations from the three Pacific French territories was held in Noumea (New Caledonia). The French authorities in Reunion felt defrauded. Although it is known that mining of the nodules is not going to be right away, the uproar created regarding the Reunion nodules is an expression of this very simple view: the Pacific nodules are located in the "zone" which should depend on the office of ocean depths ("mankind's joint estate"); Reunion's, on the other hand, are located within the 200-mile zone. They can therefore be mined by France without her having to refer to an international agency. A view, moreover, which is in pretty poor keeping with the official French doctrine in the matter, which seeks to have France play the role of intermediary for industrialized and maritime countries (followers of the greater "freedom" in ocean mining) and developing countries (anxious to establish strict international control and expand their exclusive economic zones as far as possible).

In fact France, which has a zone extending as far as 200 miles from the "base line" at its disposal around each of its possessions in the Indian Ocean, is regarded with considerable suspicion by the countries in the area. It is a fact that, with 2,703,360 sq km of maritime surface in this ocean, France has real influence--far exceeding that of the island of Mauritius (approximately 915,000 sq km) and Seychelles (1,000,000 sq km). But it turns out that 639,270 sq km of this surface are more than disputable because they correspond to the economic zones surrounding the Comorian island of Mayotte (50,000 sq km), the Malagasy islands of Juan de Nova, Bassas da India, Europa, et Glorieuses (312,980 sq km), and the Mauritian island of Tromelin (276,290 sq km). Already the collection of 28,000 young turtles on the islands of Europa and Tromelin for the establishment of a sea turtle farm in Reunion, a French overseas department, was not much appreciated--to say the least--in Tananarive and Port Louis.

Similarly, the fact that Paris grants a quota of 40,000 tons of fish (more, according to various sources) to Soviet fishing companies in its "Antarctic and Austral waters" each year is generally little appreciated in African capitals of the countries bordering the Indian Ocean.

Everything now seems to indicate that the discovery of manganese nodules will only increase the very warranted demands of Madagascar and the island of Mauritius, among other things for respect of their national integrity.

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DEVELOPMENT OF INDIAN OCEAN MARITIME ZONES

Fishing Still Not Settled

Saint Denis TMOIGNAGES in French 5 Dec 79 p 6

[Article]

[Text] There was a great deal of talk this past weekend when the Jutland called at the port of Pointe des Galets. The Jutland is a deep sea fishing vessel that operates in the Kerguelen region, up to the limits of the Antarctic ice floes.

This factory ship had all the sophisticated equipment needed to gather all of the necessary data for a better understanding, from all points of view, of this fishing zone that has been frequented for almost 10 years by Soviet and Polish fishing vessels in particular.

Result of the operation, in addition to all of the recorded scientific data: some 230 tons of fish, the main varieties being "ice water fish" (70 percent); "southern hog fish" (14 percent); "white perch" (9 percent); and "antarctic cod" (a little more than 2 percent). Also, several tons of "krill," those tiny antarctic sea shrimp!, whose proliferation is the consequence of the slaughter of whales and which, according to some theses, are the sustenance of the future.

Late Friday afternoon the various persons in charge of this operation--the ship fitters, owner of the vessel, the captain, the secretary general of market intervention and organization funds (FIOM), which financed most of the operation--drew up a balance sheet for this operation.

In conclusion, the potentials will be considered, even if it would be fitting to wait another year, even two years--the time for a new operation, estimated for the end of next year--and, in the meantime the report of the observers on the Soviet and Polish vessels that fish in the area.

One can, however, consider two things with respect to this operation, more a research operation than a so-called fishing operation.

The first is that, if Reunion intervenes in this affair, it is truly in a secondary manner. No Reunion pressing need for the development of fishing is the basis of this operation. In fact, the reason is 10,000 kilometers away from there. It is just simply that French large scale fishing has been vanishing, notably because of recent international fishing controls. In order to avoid its disappearance, this "redeployment" was envisaged. From this point of view, the Jutland also assumes a symbolic value. Built at the same time as three other vessels of the same type, it was absolutely not meant for fishing in this area. But, in view of the difficulties experienced by French large scale fishing, it risked a fate comparable to that of the France, all things considered. Whence the necessity for "reconversion," one might say.

That Reunion ship fitters may be associated with the operation does not change the basic matter at all, Reunion being only an excuse in the affair. Therefore let no one speak of the development of Reunion fishing.

The second thing is that, in spite of its potentials and the "great hope" that fishing in this area represents, it must be noted that the means are lacking. One operation this year, another next year, "perhaps two, but that would be a matter of luck," to quote a person in charge—one has the impression of an operation made to fit the economy. Statistics moreover are significant: the Jutland operation, a little more than 7 million new francs, 5 of which were paid by FIOF (market intervention and organization funds). What do these 5 million state credits represent with respect to the prospects offered by fishing in this region?

One cannot resist the temptation of making comparisons: 5 million new francs, that is, 500 million old francs for this research, whereas for example the headquarters of the General Council alone costs several billion...The worst is that the examples can be multiplied.

In any case one thing is certain. After having built installations to serve in the development of Reunion fishing, the people of Reunion have to be content with seeing Formosan, Japanese, and Korean fishermen use them. Tomorrow, if the operation progresses, it will be with ship fitters from France to do the same...and one will continue to chat about the necessity of developing Reunion fishing.

#### 'Scattered Islands'

Saint Denis TMOIGNAGES in French 6 Dec 79 p 1

[Editorial]

[Text] The "scattered islands." You know them? Maybe now. But even a few years ago, very few people in Reunion knew what this concerned. In

fact it concerns a few islands located off the coasts of Madagascar which to all appearances belong to the big island.\* That is so true that, during the colonialization era, the French colonial administration of these islands was left to Malagasy administration.

Then came Madagascar's independence. The colonists refused to give Madagascar its islands and decreed that the scattered islands are an integral part of the French Republic!

This is still the French government's line. Unbelievable. And this is supported by yearnings for the happy time of the colony, as in the case of a certain J. C. Vallee, of the JOURNAL DE L'ILE. When in a few years one reads the writings of this man, one will be astonished to see that in 1979 there were still some persons who contested Madagascar's sovereignty over the small islands that are located so close to its coasts. And to learn that on these "rocks and these uninhabitable islands," located in the Mozambique Channel in the Indian Ocean, the French government has sent soldiers to protect the territorial integrity of France!

If some believed that in 1979 colonialism had completely disappeared, they will be surprised to know of the attitude of the present French government in this part of the world.

Let no one tell us that at the time, Tsiranana, president of the Malagasy Republic, had agreed to sell off the scattered islands in order to try to justify the present attitude of the French government. One must face reality. Tsiranana was a president who was too intimate with imperialism.

He had established a neocolonial government in Madagascar. His doings cannot serve as an excuse for a foreign occupation in perpetuity of a part of the Malagasy national territory.

The Malagasy people, who today are struggling for true independence--both economic and political--must be able to exercise their sovereignty over all of their national territory. That requires that all of the so-called "scattered islands" be returned to them.

Everyone would gain from this. Especially France, whatever the champions of a former colonialism think. Infatuation with the policy of another generation, as in the case of the Giscard-Barre government, can result only in shame from the condemnation of international opinion: UN, OAU, etc.

It is time for a change in policy.

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\* Bassas da India, Europa, Juan de Nova, the Glorieuses Islands, etc.



REPORTAGE ON PROTECTION OF FISHERIES

Anti-Poaching Capability Enhanced

Victoria NATION in English 28 Nov 79 pp 1,2

[Text] Seychelles' fisheries protection and anti-poaching capabilities are expected to receive a much welcome boost next month with the arrival in the Republic of a fast and long range patrol vessel from Britain.

The patrol boat, to be named "JUNON", after one of the Seychelles sea banks, has been purchased with the aid of Britain's Overseas Development Administration and will provide much-needed help to the "TOPAZ".

The latter, it will be remembered, is a converted coastal minesweeper also named after one of the Seychelles' banks.

The Junon is 60 feet long with a 15 feet beam and is powered by two diesel engines, each developing 525 hp to give a speed of 22 knots and 1,000 mile range. The vessel has a glass-fibred hull and aluminum alloy superstructure.

Working in coordination with the two foreign protection vessels will be a specially adapted surveillance version of the well-known Britten-Norman Islander aircraft, called a Maritime Islander, which is expected to be in service, patrolling our skies on anti-poaching duties, early next year.

The aircraft is fitted with wing-tip fuel tanks, pylons for the attachment of long-range tanks and search and rescue illuminating flares. It is also fitted with radio, radar and a special camera to establish the identification and position of vessels.

The protection of our fish stocks from over-exploitation and from poaching by innumerable foreign vessels of various nationalities cannot be over-emphasized.

Statistics recently released by the Food and Agriculture Organisation (FAO) of the United Nations show that the Seychelles Exclusive Economic Zone, which covers some one million square kilometres of the Indian Ocean, is the



most important single fishing ground for deep sea tuna in the entire Indian Ocean and Western Pacific, and this is without regard to other exploitable species of fish.

Despite laws controlling the legitimate fishing of our waters by licensed foreign fishing vessels, the strain put on the Topaz currently patrolling such a gigantic area, which is in fact nearly twice as large as France or four to five times the size of the United Kingdom, is formidable.

Naturally it will never be possible to eradicate poaching completely in such a vast expanse of ocean, but together, the Topaz, Junon and Maritime Islander aircraft, backed by stiff sentences for those caught fishing illegally, should become a force to be respected by future poachers.

#### Stronger Protection for Turtles

Victoria NATION in English 29 Nov 79 pp 1,8

[Text] As part of a more serious and stable Government policy in the conservation of these marine reptiles, two new pieces of legislation tightening the protection of turtle were announced yesterday.

The Turtles (Protection) Regulations ensure total protection of all species of turtles within 1,000 metres of the granitic islands of Aride, Cousin and Carieuse, which are nature reserves; Cousine and the former South East Island which is now attached to the Seychelles International Airport runway; the group of islands within the St Anne Marine National Park (St Anne, Moyenne, Round, Cef, Long and Cachee) and Aldabra atoll and lagoon.

This, said a spokesman for the Conservation Division of the Department of Agriculture, would ensure that whatever happened to turtle stocks outside the protected areas, a certain number of turtles would always be able to survive under the protection of the law.

The second legislation, the Turtles (Extension) Order extends the former protective measures for the reptiles within a distance of 1,000 metres from the high water mark to 16 kilometres from that mark in the case of the Republic's outer islands.

Thus, should the Department of Agriculture fear that overfishing or indiscriminate catching of turtles is taking place in the outer islands, measures to protect one or all species up to a distance of 16 kilometres from the islands can be taken.

The main reason for the setting up of the potential protective distance at so much, continued the spokesman, was that it allowed the coverage of all the reefs, lagoons and shallow waters of the two largest outer island groups, of Cosmoledo and Providence.

The conservationist also revealed that the Department would also be resurrecting the old declaration procedure for the Hawksbill turtle (prized for its shell) which had been lapsed for the past ten years or so.

Under this procedure, people who had caught a Hawksbill had to take it to the district's police station, or in the case of Victoria district, the Department of Agriculture, where they had it declared. In the case of the outer islands only the shell had to be declared on Mahe.

The main change in the resurrection of the procedure would be that it would cover all species of turtle and not just the Hawksbill as before.

Looking back at the history of turtle legislation, the conservationist said that over the past ten years or so it had been constantly and alternately relaxing and tightening. Whilst the Department of Agriculture considered this an undesirable way of conducting its turtle conservation policy, the problem was, and still is, due to a number of factors.

Firstly, there was very little knowledge of the life, migration, distribution and quantity of turtles in our sea, thus causing many mistakes and fluctuations in policy.

Secondly, little was known of the number of turtles and species that were really caught or the location of the catches.

Thirdly, there was the problem of law enforcement, particularly on the remote islands.

As a result of all this, the Department was now adopting a new approach which would eventually result in a more refined, reliable and stable conservation policy.

To combat the problem of the lack of information on the lives of turtles, the Department was proposing a fairly massive assessment programme of the complete turtle stock in our waters.

It was intended that the resurrection of the declaration system would help conservationists keep an informed eye on the exploitation of what was after all a source of food, materials and revenue.

Finally, in the sphere of enforcement, the new policy would be to involve the catchers of turtles themselves in the conservation measures. This, it was hoped, would remove the idea that the laws were being forced or imposed on the catchers and would make them realise the great need for restraint.

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## DETAILS ON TUNA FISHING INDUSTRY GIVEN

### Crews Trained

Victoria NATION in English 18 Dec 79 p 1

[Text] The recruitment and training of the full complement of crews and fishermen for our crucial tuna fishing industry is progressing satisfactorily.

The first tuna vessel, "Aldabra," arrived in Port Victoria last Friday and one of her three other sister ships, "Assomption," is due at the end of this year.

Already, there are nine Seychellois training in the Malagasy Republic as officers for our budding tuna fishing industry. Several are specializing as deck officers with the rest as engineers. In January, next year, they are expected to return to Seychelles after undergoing 3 months of navigational experience aboard Malagasy vessels, for a further few months of similar experience on our own tuna vessels.

Meanwhile, there are 60 students following courses at the National Maritime School at Mont Fleuri and it has been announced by a senior spokesman of the Seychelles National Fishing Company (SNAFIC) that runs the tuna vessels that all those who obtain certificates by the end of the course this week would be employed aboard Aldabra or Assomption in the very near future.

The director of the Maritime School, Mr Jean-Marie Maillard, is expected to take the students on a study tour of the Aldabra during this week for practical lectures as part of their training.

The Maritime School was opened on 8 November 1979 by the Minister of Education and Information, Mr James Michel, for the development of our young sailors' seamanship, thus playing a great part in our struggle towards economic development.

## SNAFIC Employs Crews

Victoria NATION in English 21 Dec 79 p 8

[Text] An explanation of the current training of the crew and fishermen who will be employed by the Seychelles National Fishing Company (SNFIC) in its tuna fishing industry was published on Tuesday's NATION. It was revealed by the company that all the students who successfully complete their maritime training course at the National Maritime School at Mont Fleuri today, would be given jobs in the industry. Talking to our reporters recently, the food and Agricultural Organization technical adviser to SNAFIC, Mr Crupelian explained that all four tuna vessels, the Aldabra, which was already in port, the Assomption, which was expected at the end of December, and the Astove and Alphonse, which were expected in early April, as well as the 1,000-ton Cold Store alongside the Tuna Quay came under control of SNAFIC.

Whilst the first batch of graduating students of the Maritime School would be employed either on board the Aldabra and the Assomption or on the live-bait fishing launch, which also arrived aboard the Aldabra, the arrival of the Astove and Alphonse would coincide with the graduation of the second batch of students, he said.

The method of fishing would be the pole and line method, with the fishermen working from the protruding sides and prow of the boat. When the tuna had been caught, they would be stored aboard in a brine solution and brought to the Cold Store for commercial use and export. Meanwhile, government intended to let traditional fishermen sell their catch to the Cold Store for local consumption.

"We are going to fish about 4,000 to 5,000 tuna a year whilst our territorial waters can provide between 20,000 and 40,000 tons annually without affecting the stock," he continued, once again allaying fears of over-fishing.

The four boats would provide work for about 150 people depending on schedule and operations and, depending on the catch-rate after 6 months of fishing operation, a canning industry might be born out of the results creating more jobs, Mr Crupelian also said.

## Government Support Praised

Victoria NATION in English 15 Dec 79 pp 1, 2

(Editorial)

[Text] It is now tied up at the Long Pier--the Aldabra, the first vessel of our future tuna fishing fleet--after a long and sometimes stormy cross-  
ing from France.

Many people were at the Long Pier to welcome her and her crew home. They included ministers, government officials, fishermen, sailors, port workers, children and even one or two ladies--in fact a cross-section of our people--and it was appropriate that they were there, for the tuna fishing project, of which the vessel is a concrete part, is one of our hopes for the future.

For many years now it has been well known that the Seychelles has one of the richest fishing waters of the world and for years we have done nothing about it while others came from thousands of miles to exploit our natural heritage.

After liberation, the government acted to change the situation. It declared a 200-mile Exclusive Economic Zone, declared poaching illegal in these waters, licensed those foreign fleets which were prepared to enter into an agreement with us and took steps to see that the Seychellois enjoy the wealth that the ocean that surrounds us can provide. It launched the tuna fishing project.

The project is now about to take off. The government has provided the first vessels, the shore infrastructure and the necessary training. It now all rests on the will of our fishermen, particularly the young ones.

It is a new style of work that they will be undertaking--working not only for their own salary, but also, and fishing for their own country instead of for a foreign firm.

A large part of our development plan depends on the revenue to be derived from the tuna project, and that means on the men who will be manning the boats.

We hope that they themselves and their brothers and sisters on shore will be proud of their work.

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# METAL RESERVES IN THE OCEAN DISCUSSED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 18 Nov 79 p 2

[Article by Professor B. Yegiazarov (Leningrad), Chief Geologist of Sevmorgeo Scientific Production Association, Doctor of Geological-Mineralogical Science: "Toward Marine Metal Reserves"]

[Text] Some scientists think that the earth's reserves of many metals will be depleted earlier than its fuel and energy reserves. This means that it is already time to be concerned with the future. It is fortunate that mankind has such a potential source of metals as the bottom of our seas and oceans. First of all the shelf -- the shallow part of the ocean that lies along the coastline.

Every year rivers bring hundreds of millions of tons of sand to the ocean. Along with the sand they bring many thousands of tons of metals. Ancient and modern-day deposits of titanium, zirconium, iron, tin and gold were formed in this way. It is more profitable to develop these deposits than to mine ores on land. Here there is no need to remove a covering layer of barren rock or destroy tillable and pasture lands. There is no need to create tailings and refuse dumps, which also occupy large areas of valuable land, or to build railroads, highways and access roads.

Prospecting for marine mineral deposits is just beginning. The pace of its industrial adoption is being held back primarily by insufficiently developed technology. However, in some states, which unlike our country do not have large mineral reserves on land, development of off-shore deposits has been under way for a number of years. The most intensive efforts to prospect for cassiterite (tinstone) are being made in Indonesia. Ocean dredges extract more than 6,000 tons of concentrate here each year. Numerous mineral beds -- of magnetite, ilmenium, rutile, zirconium and monazite -- are being developed in Japan and Australia. Some countries are exploiting deposits of building minerals. Exploration provides evidence that deposits of valuable hard minerals may be discovered in the shallow shelf areas of the USSR.



Exploitation of marine deposits involves a difficult and complex body of work which includes geological survey of the shelf, scientific forecasting, exploration, prospecting and mining of the beds that are found.

The main purpose of a geological survey of the shelf, just as a survey of any area on land, is to create a geological map which serves as a source of objective and comprehensive information. This map serves as a reliable base for scientific forecasting and discovery of mineral deposits. Many large deposits have been discovered and ore-bearing regions and branch points, oil, gas and coal basins have been isolated and mapped during the geological survey process itself. For these reasons, geological survey of the shelf of the USSR should be upgraded to the status of a state geological survey. Forecast appraisal and exploratory prospecting work is now being done on the country's shelves. The Marine Geological Administration of the RSFSR Ministry of Geology has discovered and is exploring several composite deposits which contain titanium, tin, zirconium and other valuable metal ores. According to preliminary estimates, development of the composite deposits in the maritime regions would be altogether profitable. Valuable metal deposits have been discovered in the shelf areas of the north-eastern seas by the Sevmorgeo [Northern Maritime Geological Association] and VNIIMorgeo [All-Union Scientific Research Institute of Marine Geology and Geophysics].

In essence, the quest for off-shore mineral deposits means the birth of a new field — marine geological prospecting. Its development requires fundamentally new theoretical, technical and organizational decisions. The primary directions for scientific-technical, design and geological prospecting efforts to evaluate the metal-yielding potential of the shelf areas of the Soviet Union were set forth by the coordinated plan of the USSR State Committee for Science and Technology and the problem plan of the USSR Ministry of Geology for the 1976-1980 period. In accordance with these documents the Sevmorgeo Association, as the head organization in the field of "sea and ocean hard minerals" and in cooperation with organizations of other departments, developed a composite program of scientific-research, experimental-methodological and geological prospecting work. Specialized marine organizations of the USSR Ministry of Geology, RSFSR Ministry of Geology, USSR Ministry of Non-Ferrous Metallurgy, problem laboratories and faculties of many of the country's institutions of higher learning and also laboratories of the institutes of the USSR Academy of Sciences' Far Eastern Scientific Center are all taking part in realization of this program.

The area covered by the shelves of the USSR totals several million square kilometers. This is not much less than the entire continent of Australia. Much diverse technical equipment is required to conduct operations over such expanses. First of all, of course, it requires specialized geological-geophysical vessels and floating drilling rigs for both arctic and subarctic conditions. Photo-television observations and underwater exploration using manned and automatic submarine equipment could be of great use.



Practice has shown that high results are yielded by composite geophysical explorations: seismic reconnaissance, electronic reconnaissance, gravel survey, radiometric survey and hydromagnetic observation. It is essential that serial equipment be created for these explorations as well as means for affixing radionavigational data, without which the observations lose their value.

On land it is sometimes sufficient for a geologist to bend down, pick up a stone and examine it. But if he wants to examine rock at sea he cannot do it without submarine equipment, samplers and drills.

Unfortunately, in most cases the instruments and equipment for marine geological work exist only in working models. The reasons for this are many and varied.

This work is now under way in various organizations of the country. Separate mock-ups and experimental models of marine equipment are being built, for example, in laboratories of the Moscow and Leningrad Mining Institutes, the VNIPIGORTsvetmet [All-Union Scientific-Research and Design Institute of Mining Non-Ferrous Metals] of the USSR Ministry of Non-Ferrous Metallurgy, the Institute of Geological Prospecting imeni S. Ordzhonikidze, the Institute of Electrical Engineering for Communication imeni Bonch-Bruyevich, the Pacific Ocean Branch of the Maritime Geological Administration, the VNIIMorgeo, the Sevmorgeo and the Yuzhmorgeologiya [Southern Maritime Geological] Association. But the work is progressing slowly.

It is essential, in my opinion, that a unified service be created in the USSR Ministry of Geology system for creation of low-serial production of technical means which will ensure systematic study and industrial exploitation of the mineral resources of the vast shelf areas of our country. A specialized design bureau with experimental production capabilities must be set up to develop and test models and produce small series of devices and equipment for marine geological prospecting work -- on the shelf and all the world's ocean area.

Considerable funds will be required to provide maritime geological prospecting projects with specialized and drilling vessels, equipment and apparatus. The USSR Ministry of Geology and USSR Gosplan must make provisions for these funds in their plans for the 1981-1985 period. Construction of vessels equipped with the latest navigational and geophysical equipment and drilling rigs should already be included in the plans of the Ministry of Shipbuilding Industry, the Ministry of Instrument Making, Automation and Control Systems Equipment and other departments involved in the previously coordinated program.

It seems rational to combine the efforts of the USSR Ministries of Geology and Non-Ferrous Metallurgy for resolution of technical and technological problems. They have already concluded an agreement on scientific cooperation which provides for development of methods and creation of technical

means for exploration, prospecting and industrial exploitation of the hard mineral deposits on our continental shelf. They have established joint bases, test ranges and expeditions. This step may be considered the beginning of a much larger program projected for the long term.

Rapid development of marine geological prospecting will facilitate exploitation of the mineral resources under our seas and oceans and put them into the service of our country's national economy.

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## BLACK SEA EXPERIMENT USES HOLOGRAPHY IN OIL SEARCH

LDO51253 [Editorial Report LD] Moscow PRAVDA in Russian on 25 November 1979 publishes on page 6 under the rubric "In Scientists' Laboratories" a 600-word A. Androshin report entitled "Seabed on a Screen." It deals with the work of the Marine Geophysical Holography Laboratory at the southern branch of the USSR Academy of Sciences Institute of Oceanology, which uses holographic methods in the search for submarine deposits of oil, gas and other minerals. The report describes how a ship equipped with apparatus for transmitting and receiving seismic signals will conduct experiments in the Black Sea. A holographic complex on board will convert the signals into a graphic image of a cross section of the seabed on a color television screen, enabling the physical properties of submarine rocks to be evaluated.

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